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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,503	02/27/2004	Jeffrey S. Lille	SJO920000168US3, 38.11D2	9115
24033	7590	10/23/2006	EXAMINER	
KONRAD RAYNES & VICTOR, LLP 315 S. BEVERLY DRIVE # 210 BEVERLY HILLS, CA 90212			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/789,503

Applicant(s)

LILLE, JEFFREY S.

Examiner

Paul D. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/13/06, 8/11/06</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is a response to the amendment filed on 3/13/06 and to the election of species filed on 8/8/2006.

#### ***Response to the Election of Species***

1. Applicant's election with traverse of Species A, claims 1-10 and 12-17, in the reply filed on 8/8/2006 is acknowledged. The traversal is on the ground that the claims 1-10 are read on Species A and amended claim 13 is also read on Species A, which contains claims 12-17. This is not found persuasive because the claim 13 does not require a process of forming a cavity as shown in Fig. 2. On the other hand, claim 1 does not require a process of forming a polysilsesquioxone layer over a portion of the substrate. Therefore, the elected Species A is only read claims 1-10.

The requirement is still deemed proper and is therefore **made FINAL**.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yagi (US PAT. 6,013,573).

Yagi teaches a process of forming a microstructure comprising steps of: forming a trench (53) extending into a substrate (50) as shown in Fig. 7A; forming a sacrificial layer (54) in the substrate; forming a film (55) across the substrate as shown in Fig. 7B; and removing the film and the sacrificial layer by means of photolithography to form a cavity (left portion as shown in Fig. 7C) extending a distance into the substrate (see also col. 11, lines 1-58). Yagi also teaches a process of patterning by means of photolithography as shown in Figs. 1A-C including patterning photoresist layer (514) on top of the film and transferring the image of the patterned photoresist layer through the transfer film as shown in Fig. 1B and removing the patterned photoresist layer as shown in Fig. 1C (see also col. 1, lines 45-60).

Re. Claims 2 and 6: The film is made of poly-silicon material.

Re. Claim 3: Yagi also teaches that patterning by means of photolithography is performed by using reactive ion etching (see col. 11, lines 50-55).

Re. Claims 4 and 5: the substrate is made of silicon and the sacrificial layer is formed by etching the trench in the substrate and filling the trench with a silicon dioxide material.

Re. Claim 8: The cavity extends a width that is no greater than that of the substrate and the cavity extends a depth that is less than the depth of the substrate as shown in Fig. 7A.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi as in view of Cleeves et al. (US PAT. 5,830,804).

Yagi teaches all of the limitations as set forth above including the substrate made of silicon and the transfer film made of poly-silicon material. However, Yagi fails to teach the transfer film made of polysilsesquioxone. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply the polysilsesquioxone material as recited in the claimed invention because Applicant has not disclosed that the polysilsesquioxone material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Yagi because the polysilsesquioxone material as recited in the claimed invention would perform equally well with the poly-silicon material in Yagi. Therefore, it would have been an obvious matter of design choice to modify the poly-silicon material of Yagi to obtain the invention as specified in claim 7.

Alternatively, if applicant does not agree with examiner, Cleeves et al. teach a process of making an electrical device including a sensitive dielectric material (low K

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material) such as polyimide or silsesquioxone material in order to have a dielectric constant of polyimide or silsesquioxone material below a dielectric constant of the silicon dioxide for protecting outgassing during the manufacturing process (col. 4, line 63 to col. 5, line 25). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the transfer film made of poly-silicon material of Yagi by a sensitive dielectric material (low K material) such as polyimide or silsesquioxone material as taught by Cleaves et al. in order to protect outgassing during the manufacturing process.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi as in view of JP-5357978 A.

Yagi teaches all of the limitations as set forth above, but fails to teach an adhesive layer in between the substrate and the transfer film. JP-5357978 A teaches a process of forming an adhesive layer on between a silicon substrate and a support body in order to improve bonding between the substrate and the transfer film. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify facilitating process of forming the transfer film formed on the substrate of Yagi by an adhesive layer as taught by JP-5357978 A in order to improve bonding between the substrate and the transfer film.

***Allowable Subject Matter***

7. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the claimed invention such as a process of positioning a slider on a resin after the removing the sacrificial layer. It is not obvious taken alone or in combination of other references fairly to suggest the claimed invention.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

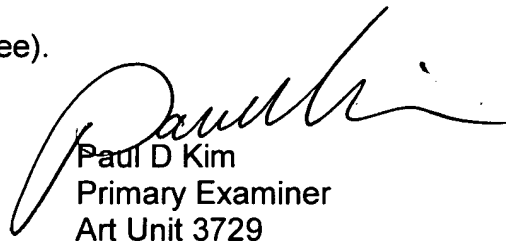
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Thursday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim  
Primary Examiner  
Art Unit 3729